FROM EVALUATION TO DESIGN SUPPORT

A proposal to incorporate social sustainability goals in building design

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INTRODUCTION AND OBJECTIVE

This work is about the inclusion of Life Cycle Thinking (LCT) into the process of designing buildings and the identification of the goals that architects should pursue to enhance the social performance of buildings. Each building is a prototype, context characteristics and requirements differ in every case and that makes more difficult to see how changes in the design process will change the assessment results. This is even more challenging when we deal with social sustainability where there is a double indeterminacy, first in the cause-effect chain of the process and second in the social impact pathways [2,3].

MATERIALS AND METHODS

To achieve these aims a proposal on how modify the building design process with a LCT approach, a selection of aspects for the assessment of the sustainability of buildings and its translation into social goals has been made. In recent years projects and labels defining how sustainability in the construction should be assessed has been developed [4,5,6,7,8,9]. The results of these works were the basis for the development of the social goals. First it was made a depth review of the indicators and aspects assessed found in projects and labels that allowed identifying the main common aspects. The next stage was the selection of the aspects in accordance with two criteria: the first one is that the aspects are affected by the decisions of the architect and the second one that the requirements, valued throughout the aspect, go beyond the requirements established in the Spanish national regulation about construction works

RESULTS AND DISCUSSIONS

The result of this first selection was a list of 97 aspects. The next step was the integration into 6 categories and 23 aspects and in the end a translation from aspects into 3 protection areas (Quality of life, Social justice and Sustainable behaviour of the construction sector) and 14 social goals. As an example the 2 aspects: “landscape” and “condition outdoor private and public spaces” has been translated into the goal “facilitate the use of outdoor spaces”. The translation has been made in order to facilitate the architects the inclusion of the aspects into their work. Table 1 gathers the result of the translation for the protection area Quality of life.

CONCLUSIONS

The characteristics of the design and production of buildings requires an adaptation of the results of LC assessments in order to make them useful for the architects.

The use of LCT requires a change in the way architects think about buildings.

It is feasible to translate sustainability assessment of buildings into social goals that architects could integrate into their building design process.

Fig. 1 Life Cycle of buildings nowadays.

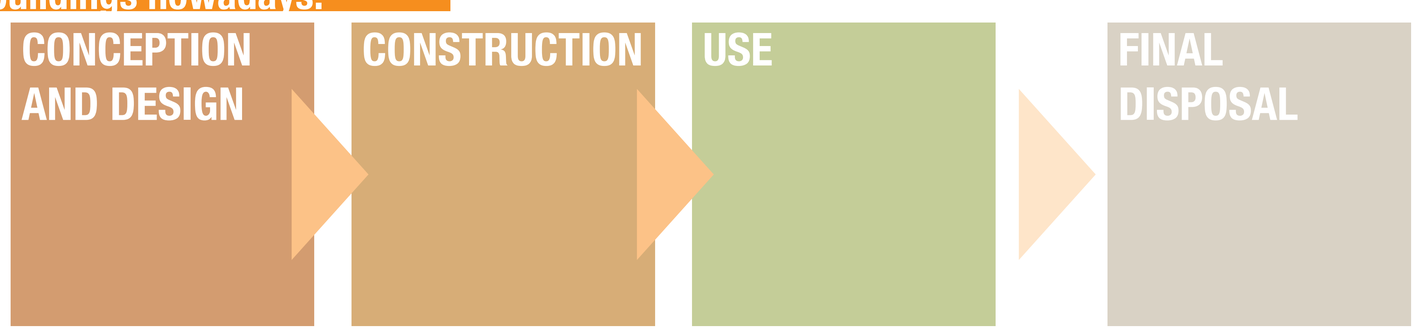

Fig. 2 LCT-Life Cycle of Buildings

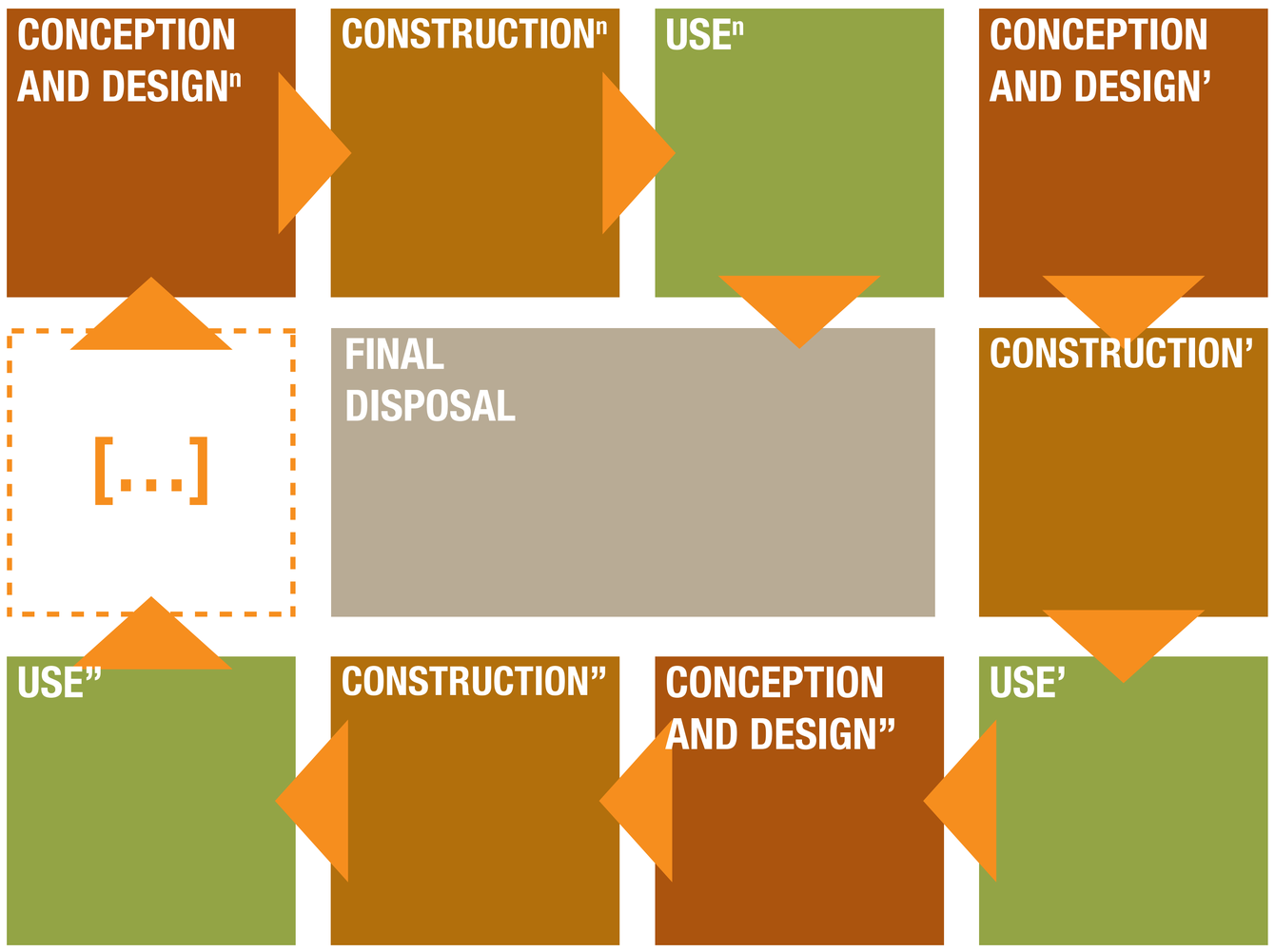

Table.1 Goals for the social sustainability of buildings **Aspects, requirements or indicators selection was made following two criteria:**

1. Capacity for action: only those on which the architect can act are selected.

2. Advance over the Spanish regulation: a socially sustainable building is to present complementary characteristics to those that must legally enforceable.

PROTECTION AREAS	SOCIAL GOALS	RESOURCES	
		PROJECTS	ASSESSMENT METHODS
QUALITY OF LIFE	To facilitate outside space enjoyment	Lense, Open House	VERDE, ITACA, DGNB, LEED, CASBEE, Green star
	To facilitate full use	Smart Eco	BREEAM, LEED, Green star, VERDE, ITACA, LiderA
	To satisfy local residents	Smart Eco	BREEAM, LEED, Green star
	To favour choivce in the relationship with neighbours	Smart Eco	BREEAM, LEED, Green star
	To facilitate use	Smart Eco, Open House	BREEAM, LEED, Green star
	To facilitate cleaning	Perfection, Open House	BREEAM, LEED, Green star, DGNB
	To facilitate maintenance	Perfection, Open House	BREEAM, VERDE, DGNB
	To facilitate the easy adjustment of comfort conditions by the user	Perfection	Green star, SBTool 2012
	To facilitate building adaptability	Smart Eco	DGNB, Green star, BEAM
	To assess and minimize maintenance costs	Smart Eco	-
	To assess and minimize construction works impact	Open House	-
	To assess and minimize building behaviour	Open House	VERDE
	To facilitate the adoption of behaviours that reduce the environmental impact, eg bicycle equipment	Open House	BREEAM, LEED, Green star, BEAM
SOCIAL JUSTICE	To facilitate full use	Smart Eco	-
	To satisfy local residents	Lense, Perfection	BREEAM, DGNB, LEED, LiderA
	To increase spaces utilization: share spaces, space renting, etc.	Open House	-
	To use natural resources in a rational way	Open House	BREEAM, LEED, Green star, BEAM
	To defend decent work	Open House, Prosuite	-
SUSTAINABLE BEHAVIOUR OF THE CONSTRUCTION SECTOR	To establish a commitment to ethical and socially responsible behaviour of the stakeholders	Lense	BREEAM, DGNB, LEED, LiderA
	Extend the life span	Smart Eco	BREEAM, VERDE, DGNB, LEED, Green star, SBTool 2012, LiderA, BEAM
	To control the quality of the project process	Superbuildings, Open House	BREEAM, LEED
	To facilitate the building adaptability (y 1.9.)	Smart Eco	DGNB, Green star, BEAM
	To assess and minimize maintenance costs (y 1.10.)	Smart Eco	VERDE
	To assess and minimize construction works impact (y 1.11.)	Open House	-
	To assess and minimize building behaviour (y 1.12.)	Open House	VERDE, ITACA
	To increase spaces utilization: share spaces, space renting, etc. (y 2.3.)	Open House	VERDE, ITACA, DGNB, Green star
	To use natural resources in a rational way (y 2.4.)	Open House	BREEAM, LEED, Green star, BEAM, VERDE
	To defend decent work (y 2.5.)	Open House, Prosuite	-
	To value innovation	-	LEED, BEAM

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